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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,061	07/09/2001	Christian Kratzsch	STUR-35	2351

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EXAMINER

MOUETTET, BLAISE L

ART UNIT PAPER NUMBER

2853

DATE MAILED: 01/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,061

Applicant(s)

KRATZSCH ET AL.

Examiner

Blaise L Mouttet

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 11-20 are objected to because claim 11 includes two sentences.

Standard formats for claims include a single sentence per claim. See MPEP 608.01(m).

Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

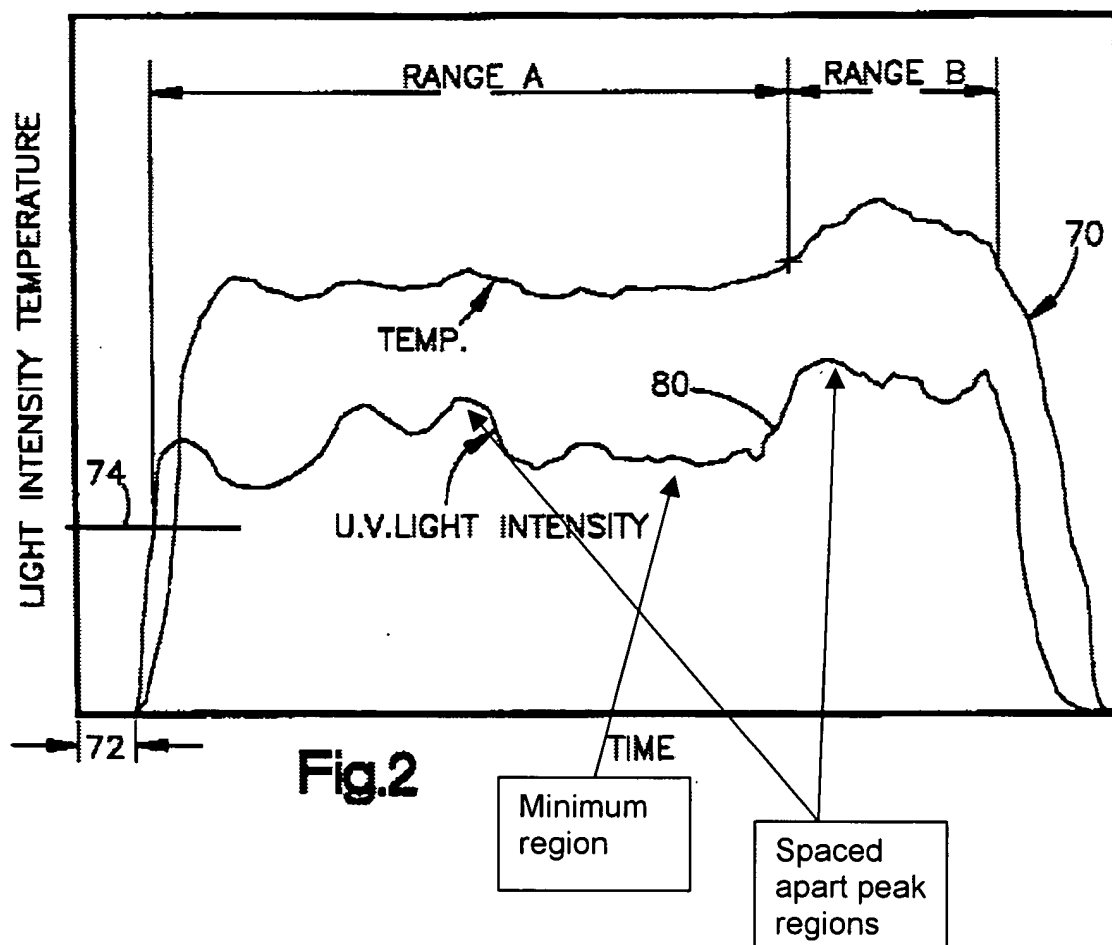
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirk US 5,651,903.

Shirk discloses, regarding claim 11, a method for materials processing by means of plasma inducing high energy radiation (column 2, lines 60-64) wherein instantaneous intensity of the radiation is measured at plural locations (range A, range B) of a vapor capillary (22) established by the radiation (column 2, line 65 - column 3, line 7, column 4, lines 4-26), and wherein shapes of two spaced apart peak intensity regions of the

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radiation emitted from the vapor capillary (22) and of a minimum region that is formed between the two peak intensity regions are detected metrologically (figure 2, column 3, lines 57-66), wherein metrologically detected shapes of the peak-intensity regions are compared with predetermined region shapes (column 4, lines 34-40), and control of the detection and evaluation in the materials processing operation takes place as a function of deviations of the detected shapes from the predetermined region shapes (column 4, lines 44-50).



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Regarding claim 14, the detection and evaluation control of the materials processing operation takes place when the shape of one of the three regions of extreme value deviates from a predetermined region shape such as pinholes and interrupted welds (column 4, lines 27 - 50).

Regarding claim 15, the detection and evaluation control of the materials processing operation is performed when workpiece (18) moves in a feed direction (20) relative to the radiation (figure 1) and when the shapes deviate from predetermined shapes (column 4, lines 34-40).

Regarding claim 16, the detection and evaluation control of the materials processing operation is performed when the deviation in shapes exceeds a predetermined difference magnitude (column 6, lines 23-29).

3. Claims 11-14, 17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chou et al. US 5,961,859.

Chou et al. discloses, regarding claim 11, a method for materials processing by means of plasma inducing high energy radiation (column 1, lines 64-66), wherein instantaneous intensity of the radiation is measured at plural locations of a vapor capillary established by the radiation (column 2, lines 1-4), and wherein shapes of two spaced apart peak intensity regions of the radiation emitted from the vapor capillary and of a minimum region (D) that is formed between the two peak intensity regions are detected metrologically (figure 7, column 9, lines 49-62), wherein the metrologically detected shapes of the peak intensity regions are compared with predetermined region

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shapes (column 2, lines 7-10), and control of the detection and evaluation in the materials processing operation takes place as a function of deviations of the detected shapes from the predetermined region shapes (column 2, lines 16-20).

Regarding claims 12, 14 and 20, the detection and evaluation control of the materials processing operation is taught to be performed when the shape of the minimum region and submaxima on both sides of a joint path deviate from a predetermined near circular (i.e. symmetrical) shape (column 11, lines 56-59).

Regarding claim 13, the detection and evaluation control of the materials processing operation takes place when there are sharp boundaries between the spaced apart peaks and minimum region (figure 7, column 9, lines 49-62).

Regarding claim 17, the detection and evaluation control of the materials processing operation takes place as a function of angular positions assumed by a straight line (A-B) passing through the peak intensity regions relative to a rotational feed direction of a workpiece being processed and moved relative to the radiation (column 4, lines 28-35, column 4, line 64 - column 5, line 20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirk US 5,651,903 in view of Torii et al. US 5,151,608.

Shirk discloses the claimed invention except for the specification that sporadically occurring, intensely radiating spots are detected in a region of measurement of the extreme values.

Torii et al. discloses that it is a natural consequence of laser welding measurement for sporadically occurring, intensely radiating spots (i.e. spatter light) to be detected (column 5, lines 40-55).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to detect spatter light in the region of measurement during the control of the materials processing of Shirk as taught by Torii et al. since Torii et al. teaches that this is a natural consequence during laser welding.

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5. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirk US 5,651,903 in view of Gross US 5,506,386.

Shirk discloses the claimed invention except that the control of the materials processing is performed on workpieces of different thickness.

Gross teaches that in laser welding operations applied to the production of motor vehicles it is useful to weld workpieces of different thickness (column 1, lines 43-46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the materials processing control of Shirk to weld workpieces of different thickness as taught by Gross.

The motivation for doing so would have been to facilitate the production of parts for motor vehicles as taught by column 1, lines 43-46 of Gross.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Musasa et al. US 5,607,605 in view of Chou et al. US 5,961,859.

Musasa et al. discloses a method for welding by high energy plasma inducing radiation comprising:

directing the high energy plasma inducing radiation (laser beams 6) at a selected weld area to effect in the weld area a radiation intensity which forms a vapor capillary (column 4, lines 41-51);

operating sensor means (31, 33) to measure the intensity of radiation from the vapor capillary (column 4, lines 49-60);

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comparing the measurements obtained by the sensor means with selected predetermined data (column 4, line 67 – column 5, line 2); and

modifying the intensity of the high-energy plasma inducing radiation to substantially match measurements obtained by the sensor means with the predetermined data (column 6, line 60 – column 7, line 2).

Musasa et al. fails to disclose that the sensor is operated to measure the intensity at two spaced apart peak intensity regions and a minimum region between the peak regions.

Chou et al. teaches that when monitoring welding the detection of a minimum region between two spaced apart peak intensity regions is an important indicator of weld problems (column 9, line 49 – column 10, line 7).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to operate the sensor of Musasa et al. to measure two spaced apart peak intensity regions separated by a minimum region as taught by Chou et al.

The motivation for doing so would have been to locate and identify weld problems as taught by column 9, lines 49 – column 10, line 7 of Chou et al.

Response to Arguments

7. Applicant's arguments filed October 30, 2003 have been fully considered but they are not persuasive.

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The applicant has argued, regarding the rejections utilizing Shirk US 5,651,903, that the reference fails to anticipate the aspect of taking two measurements in the vapor capillary.

The examiner disagrees.

As explained in the applied rejection the sensor (26) of Shirk measures light intensity in two regions (Range A, Range B) at different times (figure 2). These ranges represent plural positions and plural measurements of the workpiece (18) being welded since the workpiece is in motion in direction (20) (see figure 1).

The applicant has argued, regarding the rejections utilizing Chou et al. US 5,961,859, that the reference fails to anticipate measurement of two maximal intensities separated from each other by a minimal intensity.

The examiner disagrees.

As explained in the applied rejection and as made evident by figure 7 of Chou et al. the plasma intensity is measured at a dip (minimum intensity) separated by two maximum intensities (column 9, line 49 – column 10, line 7).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet who may be reached at telephone number (703) 305-3007 (before February 11, 2004) or (571) 272-2150 (after February 11, 2004). The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet January 23, 2004

Bm 1/23/2004

Inanita Stephens
Primary Examiner 2853
1/28/04